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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,197

04/09/2004

Kuo-Chi Tu

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47390

7590

02/09/2006

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EXAMINER

THOMAS, TONIAE M

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/822,197

Applicant(s)

TU ET AL.

Examiner

Toniae M. Thomas

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-47 and 49-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33 and 49-53 is/are allowed.
- 6) ☒ Claim(s) 34-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to the amendment filed on 18 November 2005. The amendment canceled claim 48. Accordingly, claims 33-47 and 49-53 are currently pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 41-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 41 as presented in the amendment filed on 18 November 2005 has been changed so that it now recites *a DRAM comprising... two conductive bit lines filling said two trenches respectively and continuously in contact with said trenched capacitors* (Claim 41, lines 4-5), whereas before, claim 41 recited *a DRAM comprising... two conductive lines filling said two trenches respectively and continuously in contact with said trenched capacitors*. Presumably, the insertion of the word *bit* was done unintentionally. Nevertheless, the specification does not provide support for *two conductive bit lines* as recited in

claim 41. Furthermore, Figs. 23A and 23B in the originally filed drawings show two conductive lines 84, which are clearly not bit lines, wherein the two conductive lines fill two trenches and are respectively and continuously in contact with two trenched capacitors. Therefore, the specification does not provide support for *two conductive bit lines* as recited in amended claim 41.

Claim 41 would be allowable if the word *bit* were deleted from the claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claim 34-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 as presented in the amendment filed on 18 November 2005, recites the limitation *a DRAM comprising: trenched capacitors in two trenches through an insulating layer in a memory area... and a top electrode disposed on said capacitor dielectric layer wherein an opening remains in said top electrode within said corresponding trench*. The phrase said corresponding trench lacks antecedent basis (claim 34, line 5).

Allowable Subject Matter

4. Claims 33 and 49-53 are allowable over the prior art of record. As explained in the Office action mailed on 09 September 2005, claim 33 is allowable over the prior art of record because the prior art of record does not anticipate, teach or suggest an embedded DRAM and capacitor structure device

substantially as claimed, wherein the device comprises two twisted trenches.

Claims 49-53 are allowable over the prior art of record because the prior art of record does not anticipate, teach or suggest an embedded DRAM and capacitor structure device substantially as claimed, wherein the device comprises:

trenched capacitors in two trenches through an insulating layer in a memory cell, and two conductive lines filling the two trenches respectively and continuously in contact with the trenched capacitors.

5. Claim 34 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. Claims 35-40 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claim 41 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. 112, 1st paragraph, set forth in this Office action. Claims 42-47 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicants' argument, see page 6, lines 17-20, filed on 18 November 2005 with respect to claims 34-36 has been fully considered and is persuasive. Therefore, the rejection of claims 34-36 under 35 USC 102(b) as being anticipated by Choi (US 6,072,210) has been withdrawn.

Furthermore, Applicants' argument, see page 7, lines 10-14, filed on 18 November 2005 with respect to claims 41, 42, and 48 has been fully considered and is persuasive. Therefore, the rejection of claims 41, 42, and 48 under 35 USC 102(b) as being anticipated by Chiang et al. (US 6,656,785) has been withdrawn.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMT
06 February 2006

A handwritten signature in black ink, appearing to be 'Mary Wilczewski', with a stylized, flowing script.

Mary Wilczewski
Primary Examiner